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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/722,241	11/25/2003	Heather A. Boucher Ashe	JJK-0340(P2003J020)	6662

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EXAMINER	
DOUGLAS, JOHN CHRISTOPHER	

ART UNIT	PAPER NUMBER
1764	

DATE MAILED: 06/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/722,241	BOUCHER ASHE ET AL.	
	Examiner	Art Unit	
	John C. Douglas	1764	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *25 November 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-23* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-23* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *3/12/04*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 15 and 23 are rejected under 35 U.S.C. 102(b) as being anticipated by Degnan, Jr. (US 4853104). Degnan discloses a hydrocracked, extracted lube oil with a viscosity index of 106 and where 50 % boils at 886 degrees F (474 C) (see Degnan, column 10, lines 1-6 and Table 4).

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 1-11, 13 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moyer (US 2868716) in view of Yan (US 3968023) and Woodle (US 3746635).

5. With respect to claim 1, Moyer discloses sending a lubricating oil fraction to solvent extraction, removing an aromatics rich extract stream, sending the extract stream to a separation step to remove solvent, and mixing the extract stream with a gas oil (see Moyer, column 3, lines 62-66 and column 4, lines 2-5, 16-24, 28-30, and 36-39).

Moyer does not disclose a light lube stream as feed, mixing the extract with a heavier lube stream, sending the mixed stream to a second solvent extraction, removing solvent from the raffinate stream of the second extraction zone and sending the stream to a dewaxing zone.

However, Yan discloses feeding a light vacuum oil product to an extraction step (see Yan, column 2, lines 1-3), mixing the extract with a heavy oil stream (see Yan

column 1, lines 55-64 and column 3, lines 7-18), and feeding the mixed stream to a second solvent extraction zone (see Yan, column 3, lines 7-18).

Yan discloses that the lube product desired determines the choice of feed (see Yan, column 1, lines 47-49) and that the second solvent extraction removes undesirable aromatics (see Yan, column 3, lines 54-57).

Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to modify the process of Moyer to include feeding a light vacuum oil product to an extraction step, mixing the extract with a heavy oil stream, and feeding the mixed stream to a second solvent extraction zone in order to obtain the lube product desired and to remove undesirable aromatics.

In addition, Woodle discloses removing the solvent from the raffinate stream of a solvent extraction unit and sending the treated oil free of solvent to a dewaxing step (see Woodle, column 3, lines 58-72).

Woodle discloses that lube oil stocks have a high pour point due to the presence of wax (see Woodle, column 3, lines 72-75).

Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to modify the process of Moyer to include removing the solvent from the raffinate stream of a solvent extraction unit and sending the treated oil free of solvent to a dewaxing step in order to lower the pour point of the lubricating oil.

6. With respect to claim 2, Yan discloses where the light oil feed boils between about 650 and about 850 degrees F (343-454 C) (see Yan, column 1, lines 42-45).

7. With respect to claim 3, Yan discloses where the heavy gas oil boils between about 850 and about 1100 degrees F (454-593 C) (see Yan, column 3, lines 11-15).

8. With respect to claim 4, Moyer in view of Yan and Woodle do not disclose where the light lube feed is a hydrocracked stream.

However, Yan discloses hydrocracking the raffinate from the second extraction zone (see Yan, claim 1).

Yan discloses that hydrocracked lube oil is excellent for producing high quality industrial oil (see Yan, column 2, lines 28-34).

In addition, according to *In re Burhans*, 154 F.2d 690 (CCPA 1946), "selection of any order of process steps is prima facie obvious in the absence of new or unexpected results" (see MPEP § 2144.04 IV. C.).

Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to modify the process of Moyer in view of Yan and Woodle to include a hydrocracked light lube feed because hydrocracked lube oil is excellent for producing high quality industrial oil and performing the hydrocracking step before the extraction steps would be obvious according to *In re Burhans*.

9. With respect to claim 5, Moyer discloses the solvents of furfural and phenols (see Moyer, column 2, lines 45-52).

10. With respect to claims 6-8, Yan discloses where 100 % of the extract is conducted to the mixing zone (see Yan, column 3, lines 7-11).

11. With respect to claims 9-11, Moyer in view of Yan and Woodle does not disclose where the mixed lube stream comprises about 15 volume percent, based on the mixed lube stream, of the first aromatics-rich extract.

However, Yan discloses that the lube product desired determines the choice of feed (see Yan, column 1, lines 47-49).

Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to modify the process of Moyer in view of Yan and Woodle to include where the mixed lube stream comprises about 15 volume percent, based on the mixed lube stream, of the first aromatics-rich extract because it would be obvious to adjust the mixture of extract and heavy lube to achieve the desired lube product.

12. With respect to claim 13, Woodle discloses where the dewaxing step is solvent dewaxing (see Woodle, column 4, line 1).

13. With respect to claim 16, Moyer in view of Yan and Woodle do not disclose where the heavy lube feed is a hydrocracked stream.

However, Yan discloses hydrocracking the raffinate from the second extraction zone (see Yan, claim 1).

Yan discloses that hydrocracked lube oil is excellent for producing high quality industrial oil (see Yan, column 2, lines 28-34).

In addition, according to *In re Burhans*, 154 F.2d 690 (CCPA 1946), "selection of any order of process steps is prima facie obvious in the absence of new or unexpected results" (see MPEP § 2144.04 IV. C.).

Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to modify the process of Moyer in view of Yan and Woodle to include a hydrocracked heavy lube feed because hydrocracked lube oil is excellent for producing high quality industrial oil and performing the hydrocracking step before the extraction steps would be obvious according to *In re Burhans*.

14. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Moyer in view of Yan and Woodle as applied to claim 5 above, and further in view of Sequeira, Jr. (US 5039399). Moyer in view of Yan and Woodle disclose everything in claim 5 (see paragraph 9), but do not disclose where the second aromatics-lean raffinate is dewaxed in a catalytic dewaxing zone.

However, Sequeira discloses where the secondary raffinate is passed to a catalytic dewaxing zone (see Sequeira, column 4, lines 15-20).

Sequeira discloses that catalytic dewaxing removes wax to yield a lubricating base oil of low to medium viscosity index (see Sequeira, column 4, lines 15-20).

Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to modify the process of Moyer in view of Yan and Woodle to include where the secondary raffinate is passed to a catalytic dewaxing zone in order to yield a lubricating base oil of low to medium viscosity index.

15. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Moyer in view of Yan and Woodle as applied to claim 5 above, and further in view of Degnan. Moyer in view of Yan and Woodle disclose everything in claim 5 (see paragraph 9), but

do not disclose a base oil with a mid-boiling point range of about 400 to about 490 degrees C and a Viscosity Index of about 80-120.

However, Degnan discloses lube oil with a viscosity index of 106 and where 50 % boils at 886 degrees F (474 C) (see Degnan, column 10, lines 1-6 and Table 4).

Degnan refers to the disclosed lube oil as being of high quality (see Degnan, column 10, lines 29-35).

Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to modify the process of Moyer in view of Yan and Woodle to include lube oil with a viscosity index of 106 and where 50 % boils at 886 degrees F (474 C) in order to obtain a high quality lube oil.

16. Claims 17-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fletcher (US 4399025) in view of Yan and Woodle.

17. With respect to claim 17, Fletcher discloses feeding a light lube fraction to a first solvent extraction zone, feeding a heavy lube fraction to a second solvent extraction zone, mixing the extract from the first extraction zone and the second extraction zone and stripping the solvent from the mixed extract stream (see Fletcher, column 3, lines 55-57, column 4, lines 22-60 and Figure 1).

Fletcher does not disclose light lube stream as feed for the second extraction zone, separating the aromatic rich extracts from the solvent in each extract stream, mixing the extracts after solvent separation and with a heavier lube stream, sending the mixed stream to a third solvent extraction, removing solvent from the raffinate stream of the third extraction zone and sending the stream to a dewaxing zone.

However, Yan discloses feeding a light vacuum oil product to an extraction step (see Yan, column 2, lines 1-3), mixing the extract with a heavy oil stream (see Yan column 1, lines 55-64 and column 3, lines 7-18), and feeding the mixed stream to a further solvent extraction zone (see Yan, column 3, lines 7-18).

Yan discloses that the lube product desired determines the choice of feed (see Yan, column 1, lines 47-49) and that the further solvent extraction removes undesirable aromatics (see Yan, column 3, lines 54-57).

In addition, according to *In re Burhans*, 154 F.2d 690 (CCPA 1946), "selection of any order of process steps is prima facie obvious in the absence of new or unexpected results" (see MPEP § 2144.04 IV. C.).

Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to modify the process of Fletcher to include feeding a light vacuum oil product to an extraction step, mixing the extract of the first and second extraction zones after the separation of solvent (because such a change is simply a change in order of process steps), mixing the combined extract with a heavy oil stream, and feeding the mixed stream to a further solvent extraction zone in order to obtain the lube product desired and to remove undesirable aromatics.

In addition, Woodle discloses removing the solvent from the raffinate stream of a solvent extraction unit and sending the treated oil free of solvent to a dewaxing step (see Woodle, column 3, lines 58-72).

Woodle discloses that lube oil stocks have a high pour point due to the presence of wax (see Woodle, column 3, lines 72-75).

Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to modify the process of Fletcher to include removing the solvent from the raffinate stream of a solvent extraction unit and sending the treated oil free of solvent to a dewaxing step in order to lower the pour point of the lubricating oil.

18. With respect to claim 18, Fletcher in view of Yan and Woodle do not disclose where the light lube feeds are hydrocracked streams.

However, Yan discloses hydrocracking the raffinate from the further extraction zone (see Yan, claim 1).

Yan discloses that hydrocracked lube oil is excellent for producing high quality industrial oil (see Yan, column 2, lines 28-34).

In addition, according to *In re Burhans*, 154 F.2d 690 (CCPA 1946), "selection of any order of process steps is prima facie obvious in the absence of new or unexpected results" (see MPEP § 2144.04 IV. C.).

Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to modify the process of Fletcher in view of Yan and Woodle to include a hydrocracked light lube feed because hydrocracked lube oil is excellent for producing high quality industrial oil and performing the hydrocracking step before the extraction steps would be obvious according to *In re Burhans*.

19. With respect to claim 19, Woodle discloses where the dewaxing step is solvent dewaxing (see Woodle, column 4, line 1).

20. With respect to claim 20, Fletcher in view of Yan and Woodle discloses everything in claim 19, but does not disclose where there are more the than two

hydrocracked light lube feeds. However, according to In re Harza, 274 F.2de 669, the mere duplication of parts has no patentable significance unless a new and unexpected result is produced (see MPEP 2144.04 VI. B.). Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to modify the process of Fletcher in view of Yan and Woodle to include where there are more the than two hydrocracked light lube feeds because such a modification is a mere duplication of the two feeds taught by Fletcher in view of Yan and Woodle.

21. With respect to claim 21, Fletcher in view of Yan and Woodle do not disclose where the heavy lube feed is a hydrocracked stream.

However, Yan discloses hydrocracking the raffinate from the second extraction zone (see Yan, claim 1).

Yan discloses that hydrocracked lube oil is excellent for producing high quality industrial oil (see Yan, column 2, lines 28-34).

In addition, according to *In re Burhans*, 154 F.2d 690 (CCPA 1946), "selection of any order of process steps is prima facie obvious in the absence of new or unexpected results" (see MPEP § 2144.04 IV. C.).

Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to modify the process of Fletcher in view of Yan and Woodle to include a hydrocracked heavy lube feed because hydrocracked lube oil is excellent for producing high quality industrial oil and performing the hydrocracking step before the extraction steps would be obvious according to *In re Burhans*.

22. With respect to claim 22, according to *In re Burhans*, 154 F.2d 690 (CCPA 1946), "selection of any order of process steps is prima facie obvious in the absence of new or unexpected results" (see MPEP § 2144.04 IV. C.). Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to modify the process of Fletcher in view of Yan and Woodle to include mixing the two extraction streams prior to mixing with the heavy stream because such a modification would be a change in the order of process steps and consequently would be obvious according to *In re Burhans*.

Conclusion

23. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: Kusayanagi (US 4770763).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John C. Douglas whose telephone number is 571-272-1087. The examiner can normally be reached on 7:30 A.M. to 4:30 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn A. Caldarola can be reached on 571-272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JCD

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